

REMARKS

Claims 15-29 are pending in this application. Original claims 1-14 have been cancelled and replaced by new claims 15-29. The new claims contain similar subject matter to the original claims but have been rewritten to overcome the §112 rejections. Each of the pending claims is believed to define an invention that is novel and non-obvious over the prior art. Favorable reconsideration of this case is respectfully requested.

Claims 1-14 have been rejected under 35 U.S.C. §112, second paragraph, and claims 11 and 12 have been rejected under 35 U.S.C. §112, first paragraph. Since these claims have been cancelled, withdrawal of the rejections is appropriate.

New claims 15-29 have been written to overcome the §112 rejections cited by the Examiner. With regard to the 35 U.S.C. §112, first paragraph, rejections to original claims 11 and 12, which have now been rewritten as new claims 24-26, the following remarks are appropriate. The Examiner states that the specification does not adequately describe the first recoverer, the second recoverer, the first circulator, and the second circulator. More specifically, the Examiner states that the specification does not describe how these elements are connected and how they are implemented to provide the functions associated with them.

With regard to the assertion that the specification does not adequately describe the connectivity of the above-described elements, Figure 3 illustrates the inter-connectivity of the first circulator 104 with the first recoverer 112, the first converter 108, and the base station antenna. Additionally, Figure 3 illustrates the inter-connectivity of the second circulator 106

with the second recoverer 114, the second converter 110, and the mobile station antenna. In describing the communication of information by the system shown in Figure 3, the written description states that the forward and reverse direction radio signals are incorporated into the data transmitted and received between the base station 100 and the mobile station 102 by the first and second converters 108, 110 (page 5, lines 17-19). During the transmittal and receipt of the data, the first and second circulators 104, 106 distinguish the forward and reverse direction codes and appropriately forward the data to the antenna to be transmitted or to the recoverer to be received (page 5, line 19 through page 6, line 2). The first and second recoverers 112, 114 extract the incorporated code to recover the original data (page 6, lines 2-3). Together, Figure 3 and the above-cited portions of the written description adequately describe the invention and the connectivity of the above-referenced elements so as to enable one of ordinary skill in the art to make and use the invention.

With regard to the assertion that the circulator is not adequately described, there is no duty to describe in detail a component that is known to one of ordinary skill in the art. With regard to the recoverers, the written description states that these elements extract the incorporated code to recover the original data transmitted by the system illustrated in Figure 3 (page 6, lines 2-3). One of ordinary skilled in the art would understand how to extract one type of data from a combined data stream to recover a second type of data contained within the data stream. In summary, the specification contains a sufficient written description of the invention to enable any person skilled in the art to make and use the invention.

Claims 1-10, 13, and 14 have been rejected under 35 U.S.C. §102(b) as being anticipated by Omura (U.S. Patent No. 5,235,615). A claim is anticipated only if each and every element set forth in the claim is described in a single prior art reference. Original claims 1-14 have been rewritten as new claims 15-28 to better clarify the claimed subject matter. This rejection is respectfully traversed to the extent that it is applicable to new claims 15-28.

A main feature of the present invention is a method of communicating using a Code Division Duplexing (CDD) scheme (page 1, lines 2-4 of the Specification). The CDD method allows a bi-directional communication through one channel by assigning codes to indicate a forward direction communication or a reverse direction communication (page 5, lines 3-5 of the Specification).

To the contrary, Omura discloses a method of establishing synchronous, code division multiple access (CDMA) communications between a base station and a plurality of remote units using a Time Division Duplexing (TDD) scheme. Omura states "[t]he present invention uses time division duplexing (TDD), also called the 'ping pong' protocol, to achieve full duplex operation using the same frequency" (col. 4, lines 56-58, see also Fig. 2). "With TDD, the master radio at the base station controls all timing with the corresponding slave radio in the remote unit. The slave radio at the remote unit transmits its bursts at a fixed delay from the end of the master radio's bursts" (col. 4, line 66 through col. 5, line 2).

Independent claim 19 recites "designating N unique codes to indicate either a forward direction communication or a reverse direction communication." Additionally, this claim recites

“combining, for each of a plurality of first devices, an identifier of a particular unique code with information to be communicated between the first device and a second device.” Independent claims 15, 23, and 29 recite similar elements and features, though in different language and having a different scope. The cited reference fails to disclose these claimed elements and their combination.

The asserted basis for the rejection of independent claims 1, 5, and 9, now rewritten as independent claims 15, 19, and 23, is that “the feature of unique codes indicating a communication from base station to mobile station or from mobile station to base station is inherent to Omura’s communication system, because that is needed for communications from mobile station to base station and vice versa (page 5, lines 10-13) (emphasis added).

Although the express, implicit, and inherent disclosures of a prior art reference may be relied upon in a rejection of claims under 35 U.S.C. §102 (MPEP §2112, first paragraph), the “fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic” (MPEP §2112, beginning of fourth full paragraph) (emphasis in original). “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill” (MPEP §2112, second sentence of fourth paragraph). “The mere fact that a certain thing may result from a given set of circumstances is not sufficient” (MPEP §2112, fourth sentence of fourth paragraph).

As cited on three occasions within the Office Action, “Omura discloses that for a particular two-way communication channel between a particular remote unit and the base station, the unique chip code word for the base communications signal and the remote-communication signal may be identical, see column 6, lines 47-51 (page 5, lines 16-19 of the Office Action; see also page 4, lines 8 through 11 and page 6, lines 5 through 9). Since the unique chip code word for the base communications signal (i.e., the claimed forward direction communication) and the remote communication signal (i.e., the claimed reverse direction communication) may be identical according to the teachings of Omura, it would be impossible for the identical code words to distinguish between a forward direction communication and a reverse direction communication. This is because an identical piece of information associated with two things may not be used to differentiate the two things. Because the Examiner’s technical reasoning does not support a determination that the allegedly inherent characteristic necessarily flows from the teaching of the applied prior art (MPEP §2112, beginning of fifth paragraph), allowance of the claims is appropriate.

The rejection is further supported by the statement that “having a unique code-word for each remote unit or from base station (base station code-words) is a form of indicating to or from the communications signal is to be sent” (page 5, lines 13-15). This feature is neither expressly taught by Omura nor impliedly taught or inherent in the reference teachings, as described above. Rather, this is the teaching of Applicant’s disclosure. Specifically, Applicant describes “N number of unique codes are assigned to a channel and within the N number of

codes, some are designated to indicate a forward direction and some are designated to indicate a reverse direction communication channel. Figure 4 shows an example of code assignment for a bi-directional communication system using the CDD method. The codes 1, 3, 5 and 7 indicate a forward direction communication channel and the codes 2, 4, 6 and 8 indicate a reverse direction communication channel (page 5, lines 11-16). The Examiner has impermissibly used the hindsight afforded by Applicant's disclosure to support the anticipation rejection. Therefore, allowance of independent claims 15, 19, and 23 is appropriate.

Dependent claims 16-18, 20-22, and 24-28 depend from independent claims 15, 19, and 23, respectively. Because a properly drafted dependent claim depending from an allowable independent claim is also allowable, allowance of dependent claims 16-18, 20-22, and 24-28 is appropriate.

Some additional comments regarding the rejections to the original dependent claims are provided below. With regard to original claim 3, now rewritten as claim 17, the Office Action states that the assignment of identical code words to the base communications signal and the remote communications signal corresponds to the claimed feature of communicating both the forward direction signal and the reverse direction signal through one channel (page 5, lines 16 through 21). Contrary to this assertion, assigning an identical code word to both the forward direction and reverse direction signals does not imply that these two signals are communicated through a single channel.

With regard to original claim 4, now rewritten as claim 18, the Office Action states that the assignment of identical code words to the forward direction signal and the remote direction signal corresponds to the claimed step of designating N/2 unique codes to indicate a forward direction communication and N/2 unique codes to indicate a reverse direction communication (page 6, lines 5 through 12). The assignment of identical codes to both the reverse and forward direction signals taught by Omura does not correspond to assigning an equal number of unique codes to the forward and reverse direction signals, as claimed by Applicant.

Original claims 5-8, 9, 10, 13, and 14, which are now rewritten as claims 19-22, 23, 24, 27, and 28, have been rejected for the reasons applied to original claims 1-4. Because the cited reference fails to expressly or impliedly teach the claimed elements and features, and the benefits accruing from them, claims 19-24, 27, and 28 are allowable.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Serial No. 09/189,793

Docket No. K-039

Respectfully submitted,
FLESHNER & KIM, LLP

A handwritten signature in cursive script, reading "David W. Ward".

Daniel Y.J. Kim
Registration No. 36,186
David W. Ward
Registration No. 45,198

P.O. Box 221200
Chantilly, VA 20153-1200
703 502-9440 DYK/DWW:tmd
Date: January 31, 2002